DETAILED ACTION

1. The indicated allowability of claims 22-24, 26-28 is withdrawn in view of the newly discovered reference(s) to Kuchi et al (US 7,065,156 B1). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 22, 26, 52, 59** are rejected under 35 U.S.C. 102(e) as being anticipated by Kuchi et al (US 7,065,156 B1).

Regarding claim 22, (Currently Amended) Kuchi '156 discloses a method for receiving data (see, receiving and transmitting of symbol stream, col. 2, lines 14-19) on at least one receive antenna (see, first set of antenna for receiving the input symbol stream, col. 2, lines 14-19, fig. 1a, 114a, col. 3, lines 24-27, lines 38-42) transmitted by a transmitter (fig. 1a, transmitter 100) having a plurality of transmit antennas in a multiple antenna communication system (fig. 1a, transmission system with multiple antennas (i.e. antennas 114a, 114b, 118a, 118b, col. 3, lines 13-18), said method

comprising the step of: receiving an indication of a duration to defer until a subsequent transmission (see, symbol delay period which cause offset version, col. 4, lines 29-35, col. 3, lines 27-37), said indication transmitted such that said indication is capable of being interpreted by a lower order receiver by diagonally loading a SIGNAL field (fig. 1b to fig. 1c, 3a to fig. 3b where the training symbols are phase shifted) across said plurality of transmit antennas (see, alternate transmission bursts between the antennas (i.e. antennas 114a, 114b, 118a, 118b, col. 3, lines 13-18) due to phase shift, col. 5, lines 38-54); and deferring for said indicated duration (see, symbol delay period which cause offset version, col. 4, lines 29-35, col. 3, lines 27-37).

Regarding claim 26 (Currently Amended) Kuchi '156 discloses a receiver (fig. 1a, 1b, 1c, fig. 3a, transmitter receiving of input data symbol, see, receiving and transmitting of symbol stream, col. 2, lines 14-19) in a multiple antenna communication system (fig. 1a, transmission system with multiple antennas (i.e. antennas 114a, 114b, 118a, 118b, col. 3, lines 13-18) having at least one transmitter (fig. 1a, transmitter 100) having a plurality of transmit antennas (fig. 1a to 1c, and fig. 3a, antennas 114a, 114b, 118a, 118b), comprising: at least one receive antenna (fig. 1a, second set of antenna for receiving the offset version of the symbol stream, col. 2, lines 33-43, col.5, lines 38-43) for receiving an indication of a duration to defer until a subsequent transmission (see, symbol delay period which cause offset version, col. 4, lines 29-35, col. 3, lines 27-37), said indication transmitted such that said indication is capable of being interpreted by a lower order receiver by diagonally loading a SIGNAL field (fig. 1b to fig.

1c, 3a to fig. 3b where the training symbols are phase shifted) across said plurality of antennas (see, alternate transmission bursts between the antennas (i.e. antennas 114a, 114b, 118a, 118b, col. 3, lines 13-18) due to phase shift, col. 5, lines 38-54); and means for deferring for said indicated duration (see, symbol delay period which cause offset version, col. 4, lines 29-35, col. 3, lines 27-37).

Regarding claim 52 (New) Kuchi '156 discloses a method for transmitting data (see, first set of antenna for receiving the input symbol stream, col. 2, lines 14-19, fig. 1a, 114a, col. 3, lines 24-27, lines 38-42) by a transmitter having a plurality of transmit antennas (fig. 1a to 1c, and fig. 3a, antennas 114a, 114b, 118a, 118b) in a multiple antenna communication system (fig. 1a, transmission system with multiple antennas (i.e. antennas 114a, 114b, 118a, 118b, col. 3, lines 13-18), said method comprising the step of: determining an indication of a duration to deter until a subsequent transmission (see, symbol delay period which cause offset version, col. 4, lines 29-35, col. 3, lines 27-37); and transmitting said indication of said duration to defer until said subsequent transmission (see, symbol delay period which cause offset version, col. 4, lines 29-35, col. 3, lines 27-37), said indication transmitted such that said indication is capable of being interpreted by a lower order receiver by diagonally loading a SIGNAL field (fig. 1b to fig. 1c, 3a to fig. 3b where the training symbols are phase shifted) across said plurality of transmit antennas (see, alternate transmission bursts between the antennas (i.e. antennas 114a, 114b, 118a, 118b, col. 3, lines 13-18) due to phase shift, col. 5,

lines 38-54).

Regarding claim 59 (New) Kuchi '156 discloses a transmitter (fig. 1a, transmitter 100) in a multiple antenna communication system (fig. 1a, transmission system with multiple antennas (i.e. antennas 114a, 114b, 118a, 118b, col. 3, lines 13-18), comprising: N transmit antennas (fig. 1a to 1c, and fig. 3a, antennas 114a, 114b, 118a, 118b) for transmitting at least one training symbol using at least one of said N transmit antennas (see, first set of antenna for transmitting the training symbol, col. 3, lines 55-61, col. 2, lines 33-43) and transmitting an indication of a duration to defer until a subsequent transmission (see, symbol delay period which cause offset version, col. 4, lines 29-35, col. 3, lines 27-37) said indication transmitted such that said indication is capable of being interpreted by a lower order receiver by diagonally loading a SIGNAL field (fig. 1b to fig. 1c, 3a to fig. 3b where the training symbols are phase shifted) across said plurality of transmit antennas (see, alternate transmission bursts between the antennas (i.e. antennas 114a, 114b, 118a, 118b, col. 3, lines 13-18) due to phase shift, col. 5, lines 38-54).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claims 23-24, 27-28, 43-44, 45-51, 53-58, 60-64** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuchi et al (US 7, 065, 156 B1) in view of Gardner et al (US 2005/0233709).

Kuchi '156 discloses all the claimed limitations above with the exception of claimed features:

Regarding claims 23, 27 (Original) the method, wherein said method is performed by a SISO receiver.

Regarding claims 24, 28 (Previously Presented) the method, wherein said indication is transmitted in said SIGNAL field that complies with the 802.11 a/g standards.

However, Gardner '709 from the same field of endeavor discloses the above claimed features:

Regarding claims 23, 27, 53 (Original) the method, wherein said method is performed by a SISO receiver (see, SISO legacy device, paragraph 0028, receiving antenna, paragraph 0022, 0025, paragraph 0034, the receiver detecting the long training symbol).

Regarding claims 24, 28, 60 (Previously Presented) the method, wherein said indication (see, the SINGNAL field provides receiver with information about the packet length and how long to defer, paragraph 0055, fig. 1, fig. 4 and fig. 8) is transmitted in said SIGNAL field that complies with the 802.11 a/g standards (see, legacy preamble/signal according toe IEEE 802.11a, paragraph 0027-0028, fig. 1, Signal field, paragraph 0059, 0078, 0005).

In view of the above, having the delay diversity for multiple antennas of Kuchi '156, and the method for transmitting preamble with plurality of training symbols to provide co-existence between 802.11devices and higher data rate MIMO devices of Gardner '709, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching features of Kuchi '156 by using teaching features as taught by Gardner '709 in order to provide compatibility between devices.

Kuchi '156 discloses all the claimed limitations above with the exception of claimed features:

Regarding claims 42, 47, 53, 61 (New) the method, wherein said duration is represented as a duration of said transmission.

Regarding claims 43, 48, 54, 62 (New) the method, wherein said duration is represented as a length of said transmission.

Regarding claims 44, 49, 55, 63 (New) the method, wherein said SIGNAL field indicates a number of said antennas in said multiple antenna communication system.

However, Gardner '709 from the same field of endeavor discloses the above claimed features:

Regarding claims 42, 47, 53, 61 (New) the method, wherein said duration is represented as a duration of said transmission (see, packet duration, paragraph 0059, lines 1-6).

Regarding claims 43, 48, 54 ,62(New) the method, wherein said duration is represented as a length of said transmission (see, the SIGNAL field provides the receiver with information about the packet and how long to defer, paragraph 0054, lines 9-12).

Regarding claims 44, 49, 55, 63 (New) the method, wherein said SIGNAL field (fig. 1, SIGNAL field) indicates a number (see, signal information indicating channel number, paragraph 0058, lines 15-17) of said antennas in said multiple antenna communication system (fig. 3, MIMO antennas 102, 104, transmitter 0 and 1, paragraph 0022, 0056).

In view of the above, having the delay diversity for multiple antennas of Kuchi '156, and the method for transmitting preamble with plurality of training symbols to provide co-existence between 802.11devices and higher data rate MIMO devices of Gardner '709, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching features of Kuchi '156 by using teaching features as taught by Gardner '709 in order to provide compatibility between devices.

Kuchi '156 discloses all the claimed limitations above with the exception of claimed features:

Regarding claims 45, 50, 57, 64 (New) the method, wherein said number of said antennas allows said multiple antenna communication system to be scalable.

Regarding claims 46, 51, 58, 65 New) the method, wherein said number of said antennas allows a receiver to correlate channel coefficients with corresponding transmit antennas.

However, Gardner '709 from the same field of endeavor discloses the above claimed features:

Regarding claims 45, 50, 57, 64 (New) the method, wherein said number of said antennas allows said multiple antenna communication system to be scalable (see, multiple antennas, one or more receive and transmit antennas may be used, paragraph 0022, lin1 7-14)

Regarding claims 46, 51, 58, 65 New) the method, wherein said number of said antennas allows a receiver to correlate channel coefficients with corresponding

transmit antennas (see, at the receive side, channel estimates for each transmitter to generate the impulse response estimate, paragraph 0071).

In view of the above, having the delay diversity for multiple antennas of Kuchi '156, and the method for transmitting preamble with plurality of training symbols to provide co-existence between 802.11devices and higher data rate MIMO devices of Gardner '709, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching features of Kuchi '156 by using teaching features as taught by Gardner '709 in order to provide compatibility between devices.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CANDAL ELPENORD whose telephone number is (571) 270-3123. The examiner can normally be reached on Monday through Friday 8:00AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Candal Elpenord/

Examiner, Art Unit 2473
/Steven HD Nguyen/
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